

Due 12-30-2004

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
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PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

| | | |
|---|--|---|
| Applicant's or agent's file reference L3799-01 | | Date of mailing (day/month/year) 30 SEP 2004 FOR FURTHER ACTION See paragraph 2 below |
| International application No. | International filing date (day/month/year) | Priority date (day/month/year) |
| PCT/US04/05659 | 26 February 2004 (26.02.2004) | 05 March 2003 (05.03.2003) |
| International Patent Classification (IPC) or both national classification and IPC | | |
| IPC(7): C08L 83/04 and US Cl.: 525/100, 191; 524/284 | | |
| Applicant | | |
| W. R. GRACE & CO. CONN. | | |

1. This opinion contains indications relating to the following items:

- | | | |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input checked="" type="checkbox"/> | Box No. VIII | Certain observations on the international application |

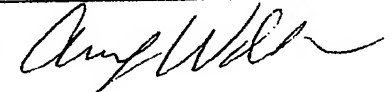
2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

| | |
|--|--|
| Name and mailing address of the ISA/ US Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 305-3230 | Authorized officer MARIAN KNODE  Telephone No. 571-272-1700 |
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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US04/05659

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐ a sequence listing

☐ table(s) related to the sequence listing

b. format of material

☐ in written format

☐ in computer readable form

c. time of filing/furnishing

☐ contained in international application as filed.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

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Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | |
|-------------------------------|---------------------------------|-----|
| Novelty (N) | Claims <u>9-10, 16</u> | YES |
| | Claims <u>1-8, 11-15, 17-21</u> | NO |
| Inventive step (IS) | Claims <u>NONE</u> | YES |
| | Claims <u>1-21</u> | NO |
| Industrial applicability (IA) | Claims <u>1-21</u> | YES |
| | Claims <u>NONE</u> | NO |

2. Citations and explanations:

Claims 1-8, 11-15 and 17-21 lacks novelty under PCT Article 33(2) as being anticipated by Knight (EP 0,129,309) as evidence by Freeman.

Knight discloses a sealing gasket formed on the inner surface of a screw closure for a container prepared from a composition comprising A) a thermoplastic polymeric material, such as polyethylene, polypropylene, ethylene vinyl acetate, etc. and mixtures thereof and a slip aid (pg. 2, line 27 to col. 3, line 3; pg. 3, lines 25-33; pg. 6, line 14 to pg. 7, line 7). A block copolymer of ethylene vinyl acetate and polyethylene can be used (pg. 8, lines 13-16). The slip aid can be a blend of an aliphatic amide containing 10 to 30 carbon atoms (e.g., stearamide, etc.) and a silicon oil (pg. 9, lines 7-13; examples 4-5). The container can be a beverage container (col. 9, line 33 to pg. 10, line 2). The silicone slip aid can be a polysiloxane having 60,000 cS (example 1). Freeman teaches that the viscosity (n) in centistokes and degree of polymerization (n) of a polydimethylsiloxane can be described by the equation $\log n = 0.1 n^{0.5} + 1.1$

Therefore, a polysiloxane of a viscosity of 60,000 cS has a molecular weight of about 78,000.

Claims 1-14 and 16-21 lack an inventive step under PCT Article 33(3) as being obvious over Couturier (4,870,128) in view of Knight (EP 0,129,309).

Couturier discloses a gasket for a closure comprising a copolymer of ethylene and an olefinic carboxylic acid. A low molecular weight of polyethylene or an ethylene vinyl acetate copolymer can be used. (col. 1, lines 41-52; col. 3, lines 13-66). A polypropylene can be used (col. 3, line 63). Lubricants such as organopolysiloxanes including polydimethylsiloxane, octadecanamide (i.e., stearamide), oxidized polyethylene, etc. can be used alone or in combination (col. 3, lines 43-66). The closure can be a beverage closure (col. 4, lines 56-66). Couturier is silent on the molecular weight of the organopolysiloxanes. However, Knight teaches the use of a polysiloxane having a viscosity of 60,000 cS as a slip aid in a gasket composition (Example 1), which has a molecular weight 78,000, supra. It is noted that Knight's disclosure is in the same field as that of the inventor's endeavor. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to choose and try Knight's organopolysiloxane in Couturier's composition with expected success.

Claims 1-21 meet the criteria set out in PCT Article 33(4), and thus having industrial applicability because the subject matter claimed can be made or used in industry.

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the questions whether the claims are fully supported by the description, are made:

Claims 2, 4 and 21 are objected to under PCT Rule 66.2(a)(v) as lacking clarity under PCT Article 6 because claims 2, 4 and 21 are indefinite for the following reason(s):

Regarding claim 2, the phrase "such as" (line 2) renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention.

In Claim 4 (line 2), "ethylene" and "propylene" causes confusion because they are gaseous monomers in standard temperature and pressure.

Claim 21 recites the limitation "said base polymer(s)" in lines 5 and 8. There is insufficient antecedent basis for this limitation in the claim.